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TUESDAY EVENING, NOVEMBER 27TH, 1894.

Dr. Britton in the chair.

Mr. L. S. Livingston, 22 East 16th Street, New York City, was elected an active member.

The Finance Committee reported in favor of investing the Buchanan bequest in a savings bank. Upon motion it was unanimously resolved that the report be accepted and approved and that the Treasurer be empowered to make such investment in a savings bank of his selection.

The announced papers of the evening were then read:

1. By Dr. Emily L. Gregory, "Notes on Plant Physiology in German Laboratories."

2. By Dr. Albert Schneider, "Notes on some Lichens of Eastern North America." In connection with the latter paper Dr. Schneider offered some interesting suggestions, based upon his own observations, concerning "Accidental Symbiosis" and concerning the development of chlorophyll bodies.

Dr. Britton exhibited specimens of *Chenopodium album* L. and *C. viride* L., commenting on the general distribution of the former westward and of the latter in the east, and calling attention to the difference in the time of flowering of the two species when they grow together. He requested that observations be made and notes communicated bearing upon the specific distinctness of the two forms. Discussing this paper Dr. Rusby called attention to the close similarity between *C. album* and *C. Quinoa* when found growing wild together in the Andean region.

Reviews.

*Contributions to Lichenology.**—Part I. of Reinke's contributions treats of the podetium of *Cladonia.* It is essentially a criticism of Krabbe's monograph of *Cladonia.* Krabbe maintains that the podetium is the fruit (Frucht) of *Cladonia,* whether it be sterile or fertile. Reinke takes objection to this view, maintaining that all podetia are functially thalloid, hence assimilative and not reproductive. They are considered to be peculiarly modified portions of the thallus or adventitious branches developing endogenously from the "gonidial" (algal) layer of the thallus. They possess a gonidial zone which enables them to function as the thallus proper; indeed in some *Cladonia* species the thallus is rudimentary or wholly wanting, in which case the assimilating function devolves wholly upon the podetia. Sometimes they continue to grow for centuries without bearing apothecia or pycnidia, sometimes they bear both and in addition soredia. In fact, they develop, grow and function as the thallus proper.

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* Abhandlungen uber Flechten von J. Reinke in Kiel. Pringsheim Jahrbücher. Heft 3, 1894.

In Part II. Reinke discusses the position of lichens in the vegetable kingdom. The author places lichens as an independent branch of the plant kingdom, having a special phylogeny. His idea is essentially as follows: In the beginning lichens originated through the association of a fungus and an alga in which the fungus played the part of a true parasite, hence the symbiosis was not yet mutualistic. Through natural selection or some other factor the symbionts developed into a morphological unit, for example, *Collema* thallus. Out of this first lichen (*Collema*) other species have branched off. Lichens belong neither to the algæ nor to fungi. The author considers a lichen as perfect a morphological unit as a tree. He suggests that it may be possible to separate the green and colorless portions of higher plants. (The writer would here state that theoretically chloroplastids of phanerogams must be looked upon as much modified algæ, or at least as chlorophyll bearing and CO_2 assimilating living units.) The true reproductive organs of the lichen are the soredia, since they alone possess the structures capable of producing a new lichen. The spores cannot develop a new lichen until they can develop with the essential alga. Hyphæ and gonidia (algæ) have the same relation to each other as the green and colorless cells in *Riccia* and *Marchantia*. Therefore, lichens should not be placed subordinate to fungi, as is almost universally done now.

In conclusion, the writer would express it as his opinion that most modern lichenologists agree with the author as to the lichen nature. The lichen structure is certainly more or less of a morphological unit. In the ages to come the lichens may be placed as a separate class. By that time they may have become more decidedly individualized as units. Our present knowlege of their morphology certainly makes it most convenient to arrange them under fungi as ascolichenes and basidiolichenes rather than a separate class. ALBERT SCHNEIDER.

Flora of Nebraska.—Edited by members of the Botanical Seminar of the University of Nebraska. Introduction and Part 1, Protophyta-Phycophyta; Part 2, Coleochaetaceae, Characeae (4to, pp. 128, *pl. 36*. Lincoln, Nebraska, published by the Seminar, 1894).

The beautiful work here noticed must long hold first place in the published results of the exploration and study of a local flora. It is hard to find words in which to express our gratification at its appearance, and we have tried in vain to find any point which is fairly open to adverse criticism. Beginning with a synopsis of the larger groups, including families, and an introduction contributed by Professor Bessey, in the details of which there is room for much difference of opinion, there follow concise descriptions of the classes, orders, families, genera, species and varieties of Protophyta and Phycophyta found within the State, contributed by Mr. DeAlton Saunders, and of the Coleochaetaceae and Characeae by Mr. Albert F. Woods. The descriptions are well drawn, the typography excellent and the plates accurate and well executed. We tender our cordial congratulations to all concerned in the production of the book and to all who may have opportunity to use it. N. L. B.

Ueber neue fossile Pflanzenreste vom Cerro de Potosi. H. Engelhardt. (Abh. Isis, Jahrg. 1894, 3–13. *pl. 1.*)

This is the third contribution published on the flora of the volcanic ash deposits of Cerro de Potosi, Bolivia. The author of the present paper first gave an account of the plant remains, with descriptions of six new species, in Abh. Isis, Jahrg. 1887, 36, 38, *pl. 1*. Some years later further collections were made which were examined by Dr. N. L. Britton, who published the results of his examination in Trans. Am. Inst. Min. Eng. **21**: 250–259, with descriptions and figures of ten more new species. The present paper adds thirty-five to those already published, and it is of interest to note that they have nearly all been referred to genera which now inhabit the region and to species evidently closely allied if not identical with living ones. A. H.